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SUBADULT AND PALE STEPPE EAGLES BREEDING IN MONGOLIA

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All adult Steppe Eagles (*Aquila nipalensis*) are reportedly very dark (Ferguson-Lees and Christie 2001). However, the closely related (Wink and Sauer-Gürth 2000) Tawny Eagle (*A. rapax*) does have a pale adult morph (see Plate 114, Brown and Amadon 1968). Clark (1992) decried the confusion in the scientific literature and in museum collections over the various morphs of the Steppe and Tawny eagles and advanced “criteria for the correct identification of all museum specimens and live birds” He states conclusively that Steppe Eagles become “much darker as adults.” His assertion stems from fieldwork in Israel, India, and Africa, and, more importantly, from handling over 300 museum specimens. His conclusion reaffirms statements by Cramp and Simmons (1980) that subadults are paler than adults and that all very pale birds are young.

While it is helpful to examine migrants and wintering birds in evaluating the prevalence of adult morphs, evidence to support the claim that no adults are pale must come from the breeding grounds. Even there, if very pale breeders are found, it is necessary to determine if re-

placement (i.e., newly grown) feathers are light or dark before concluding that the Steppe Eagle has a pale adult morph. Although subadults of some species of *Aquila* eagles are known to at least occasionally breed (e.g., Newton 1979, Steenhof et al. 1983), I know of no prior record of a subadult Steppe Eagle breeding.

During five expeditions to Mongolia from 1994–2000, I found more than 20 Steppe Eagle nests. At one site in arid southeastern Mongolia (115°E, 45°N), we found a very pale bird (Fig. 1). Elsewhere we found two rufous-plumaged birds. All three were attending live young. One of the rufous birds was captured (Ellis et al. 2001) and photographed in hand. The very pale bird was photographed on its nest at a distance of 2 m.

In Mongolia, Steppe Eagle adults are generally deep chocolate brown above and below with blackish remiges and rectrices finely barred with black. These dark birds match Clark’s (1992, 1996) descriptions of the dark brown adult plumage. The only consistently present light area in the plumage of dark adults is a broken line of whitish spots on the upper tail coverts. This line is readily visible at great distances when a bird is flying, except when overhead. Some dark birds (probably those molting from subadult plumage) show a dappled line of light brown at the trailing edge of the under wing coverts. Under some light conditions, pale areas at the base of the primaries are apparent on the underside of the wings of some, and probably all, dark adults. The head is gen-

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Figure 1. Pale Steppe Eagle at its nest in southeastern Mongolia. This bird resembles the adult pale morph of the Tawny Eagle as illustrated by J. Harrison (Brown and Amadon 1968:649) and appears identical to a pale subadult or adult Tawny Eagle photographed at the nest by P. Steyn (1973:54–55). Note metal trash in nest, a conspicuous, and sometimes dangerous, feature of Steppe Eagle nests across Mongolia (Ellis and Lish 1999). The lower photo includes a hatchling and 1 egg. This photo also shows two generations of feathers (most conspicuous in the anterior scapulars), feathers of both generations are worn (suggesting that this bird is at least 2 yr old) and both are very light (demonstrating that in this individual light plumage was retained). The upper photo shows pale tips on rectrices, “tertials,” and secondaries, a characteristic common to all juvenile Steppe Eagles. This bird fits Clark’s (1992) gray-brown morph, frequently seen in Steppe Eagles for the first 3 or 4 yr.

erally uniformly dark, but, as stated by Cramp and Simmons (1980), some birds show light (buff) hackles on the nape or back of the head. One extremely pale-headed, but otherwise dark, adult from central Mongolia was observed at close range while it perched on the nest rim. It displayed a light area on its head and nape just as pale as in most adult Golden Eagles (*A. chrysaetos*).

In contrast to the extremely dark adults that are typical for Mongolia, our blond breeder (Fig. 1) was uniformly pale buff on the whole mantle, head, and upper wing coverts. Only the remiges, rectrices, and distal scapulars were heavily pigmented. Even though the rectrices and secondaries were dark, they showed pale tips and pale basal barring and were, therefore, much lighter than those of dark adults. W. Clark (pers. comm.) compared photographs of this bird with his published descriptions of various age classes (Clark 1992, 1996) and concluded that this bird was subadult. Indeed, it closely matches the third/fourth-year Steppe Eagles illustrated by Ferguson-Lees and Christie (2001).

The key plumage features leading to the conclusion that the bird was not adult are the pale tips of the rectrices and secondaries, very evident in the photographs (Fig. 1). In the pale morph of the Tawny Eagle, extensive pale tips reportedly are present only on juveniles. However, Steyn (1973) photographed a breeding, pale morph Tawny Eagle with pale tips of secondaries and rectrices just as seen in our pale bird from Mongolia. Further, Ferguson-Lees and Christie (2001) illustrate the pale morph adult Tawny Eagle with pale tips. Hence the confusion: was this bird a subadult breeder or do both species have extremely pale adults which show broad, light tips to the rectrices and secondaries? However, the rarity of records of blond Steppe Eagles breeding (i.e., this is the only record now documented) strongly suggests that the pale bird was not an adult.

Our two intermediate morph breeders match the rufous-tawny, subadult morph described by Clark (1992). As such, these two records substantiate breeding in subadult plumage and add the Steppe Eagle to the list of *Aquila* eagles that breed in subadult plumage. However, there is a remote possibility that the rufous-tawny eagles and the blond eagle may have been replacement birds (Phillips et al. 1991), not the biological parents of the young in the nests.

RESUMEN.—Una forma pálida y dos oscuras de águila de las estepas (*Aquila rapax*) fueron observadas en medio de 20 parejas encontradas anidando en Mongolia. Todas las tres estaban cuidando juveniles vivos. Las características del plumaje de las aves de color café rojizo—tostado sugieren que no eran adultos. En consecuencia la anidación de subadultos del águila de las estepas (*Aquila nipalensis*) es documentada. La anidación también se documentó para un ave de fase pálida, pero la edad de esta ave es incierta; tampoco se sabe si esta era la primera forma pálida adulta conocida para la especie o, si mas

probablemente, esta representa un ave reproductora de 2-, 3-, o 4 años de edad.

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